



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,156	09/25/2003	Mingjie Ke	020569-03500 P(203-1335-U)	7041
54487	7590	02/23/2006	EXAMINER	
JONES & SMITH, LLP THE RIVIANA BUILDING 2777 ALLEN PARKWAY, SUITE 800 HOUSTON, TX 77019-2141			SUCHFIELD, GEORGE A	
			ART UNIT	PAPER NUMBER
			3676	

DATE MAILED: 02/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/671,156

Applicant(s)

KE ET AL.

Examiner

George Suchfield

Art Unit

3676

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 and 45-53 is/are pending in the application.
- 4a) Of the above claim(s) 26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 8-25, 27-35, 45, 46 and 49-53 is/are rejected.
- 7) ☒ Claim(s) 6, 7, 47 and 48 is/are objected to.
- 8) ☒ Claim(s) 1-35, 45-53 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 3676

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 46 and 49 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Markush groups or species recited in claims 46 and 49 appear to be outside the Markush grouping set forth in the parent claim 45. Thus, claims 46 and 49 conflict with parent claim 45, and are therefore indefinite. Moreover, a dependent claim is required to include all the limitations of the parent claim, and then set forth an additional step or limitation.

3. Claims 1-5, 8-12, 14, 15, 18 – 21, 27-31, 45, 46, 49, 50, 51 and 53 are rejected under 35 U.S.C. 102(b) as being anticipated by Dawson et al (5,465,792).

With respect to claim 1: Dawson et al teaches in column 1, Line 60 - column 3, Line 5 a method for inhibiting or controlling inorganic scale formations in a subterranean formation or in a wellbore, comprising pumping downhole a copolymer comprising: quaternary ammonium salt; and an acrylamide unit.

With respect to claims 2 – 5, as well as independent claims 27 and 45, as well as claims 46, 49, 50: Dawson et al teaches in column 2, line 54 - column 3, line 5 a method wherein the quaternary ammonium salt is dimethyldiallylammonium chloride.

With respect to claims 8 - 10: Dawson et al teaches in column 2, lines 62 - 65 a method wherein the acrylamide unit is acrylamide.

Art Unit: 3676

With respect to claims 11, 28 and 53: Dawson et al teaches in column 6, Imines 16 - 20 a method wherein the copolymer is pumped downhole as a component of a carrier fluid.

With respect to claims 12, 29 and 53: Dawson et al teaches in column 3, Imines 48 - 64 a method wherein the copolymer is pumped downhole as part of a brine.

With respect to claims 14 and 30: no patentable weight or significance is accorded to the term "fracturing" fluid, insofar as no actual step of fracturing the formation has been positively recited. Moreover, it is deemed that the well treatment composition of Dawson et al could function as a fracturing fluid, depending on the amount of pressure applied from the surface.

With respect to claim 15 and 31: Dawson et al teaches in column 3, Imines 48 - 64 a method wherein the copolymer is pumped downhole as a component of an acidizing fluid.

With respect to claims 18 and 19: Dawson et al teaches in column 5, lines 2 - 13 a method wherein the molar ratio of acrylamide unit:diallyldimethylammonium salt is from about 1:1 to about 3:1.

With respect to claims 20, 21 and 51: Dawson et al teaches in column 2, Line 54 - column 3, Line 5 a method wherein the copolymer further comprises an acrylic acid unit. Additionally, the reference teaches a method wherein the acrylic acid unit is acrylic acid, (meth)acrylic acid or a salt thereof.

4. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dawson et al in view of Brookey et al (6,123,159).

With respect to claim 13: Dawson et al teaches the features as previously claimed except for wherein the brine carrier fluid comprises contains calcium bromide,

Art Unit: 3676

zinc bromide, calcium chloride, sodium bromide or a combination thereof. Brookey et al teaches in column 3, lines 43 - 51 a method wherein the brine carrier fluid comprises contains calcium bromide, zinc bromide, calcium chloride, sodium bromide or a combination thereof.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Dawson et al's invention by using calcium bromide, zinc bromide, calcium chloride, sodium bromide or a combination thereof in the brine carrier fluid in view of Brookey et al. The motivation for this combination is that these are common salts used in brines.

5. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dawson et al in view of Weaver et al.

With respect to claim 22: Dawson et al teaches the features as previously claimed except for wherein the weight average molecular weight of the copolymer is between from about 500,000 to about 5,000,000. Weaver et al teaches the features as previously claimed.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Dawson et al's invention by using the a copolymer where the average molecular weight of the copolymer is between from about 500,000 to about 5,000,000 in view of Weaver et al. The motivation for this combination is that copolymers at these molecular weights have unexpected stability and effectiveness.

6. Claim 32 is rejected under 35 U.S.C: 103(a) as being unpatentable over Dawson

Art Unit: 3676

et al, as applied to claim 27 above, and further in view of Reeves, III et al (4,630,679).

With respect to claim 32: Dawson et al teaches the features as previously claimed except for wherein the copolymer is soluble in a brine having a density greater than or equal to 14.0 lb/gal. Reeves, III et al teaches in column 3, line 65- column 4, line 5 a method wherein the copolymer is soluble in a brine having a density greater than or equal to 14.0 lb/gal.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the process of Dawson et al by using a copolymer that is soluble in a brine having a density greater than or equal to 14.0 lb/gal in view of Reeves, III et al. The motivation for this combination is that this is a density range that general brines exhibit.

7. Claim 33 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dawson et al in view of Reeves, III et al.

With respect to claim 33: Dawson et al teaches the features as previously claimed except for wherein the copolymer is soluble in a brine having a density greater than or equal to 14.0 lb/gal. Reeves, III et al teaches in column 3, line 65 - column 4, Line 5 a method wherein the copolymer is soluble in a brine having a density greater than or equal to 14.0 lb/gal.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the process of Dawson et al by using a copolymer that is soluble in a brine having a density greater than or equal to 14.0 lb/gal in view of Reeves, III et al. The motivation for this combination is that this is a density range that general brines exhibit.

Art Unit: 3676

8. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dawson et al and Reeves, III et al as applied to claim 33 above, and further in view of Weaver et al.

With respect to claim 34: Dawson et al and Reeves, III et al teach the features as previously claimed except for wherein the weight average molecular weight of the copolymer is between from about 500,000 to about 5,000,000. Weaver et al teaches the features as previously claimed.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the process of Dawson et al, as modified by Reeves, III et al, by using a copolymer wherein the weight average molecular weight of the copolymer is between from about 500,000 to about 5,000,000 in view of Weaver et al. The motivation for this combination is that copolymers at these molecular weights have unexpected stability and effectiveness.

9. Applicant's arguments filed with the amendment have been fully considered but they are not persuasive.

In response to applicant's arguments that the reference to Dawson et al is not directed to a method inhibiting or controlling inorganic scale formations, the recitation upon which such argument is based, e.g., the recitation in claim 1 of "inhibiting or controlling inorganic scale formations in a subterranean formation or in a wellbore" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*,

Art Unit: 3676

535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). Otherwise, the only positively recited process step in claim 1 of “pumping downhole” the copolymer is clearly set forth in Dawson et al.

Applicant’s further argument(s) against Dawson et al, i.e., Dawson et al additionally requires a crosslinking agent for the copolymer is not well taken insofar as claim 1, as presently recited, does not include any language which would exclude the crosslinking agent of Dawson et al.

Applicant’s further argument(s) against Dawson et al, as modified by Brookey, is not concurred in. Brookey is relied upon merely to teach or disclose the use of the specific salts set forth in claim 13, one or more of which, such as calcium bromide or zinc bromide, would appear to be readily compatible with, or comprise, the “heavy brine” carrier fluid of Dawson et al (col. 3, lines 55-57).

Applicant’s further argument(s) against Dawson et al, as modified by Weaver, is also not concurred in. It is noted that claim 22 does not even call for the use of a terpolymer, as argued, but rather is directed to a molecular weight range of the copolymer. It is further noted that both Dawson et al and Weaver are directed to the same use of a copolymer for reducing the production of water in a well. As noted previously, applicant’s independent claims, such as claim 1, merely call for “pumping downhole” a copolymer, which could be used for any well treatment application, even comprising a drilling process.

Applicant’s further argument(s) against Dawson et al, as modified by Emmons et al, is deemed moot insofar as this rejection has been dropped, and the claims in question, i.e., 27-29

Art Unit: 3676

and 31 have now been grouped as being rejected over Dawson alone. It is noted claim 27, similar to claim 1, merely comprises a process of “pumping downhole” a copolymer.

Similarly, Applicant’s further argument(s) against Dawson et al , as modified by Aften et al, is deemed moot insofar as this rejection has been dropped, and claim 30 has now been grouped as being rejected over Dawson et al alone.

Applicant’s further argument(s) against Dawson et al , as modified by Reeves, III et al, is not concurred in. Reeve, III et al is relied upon merely to teach or disclose the use of a well servicing or treatment brine characterized by having a density within the specific range set forth in claims 32 and 33, which would appear to readily comprise, the “heavy brine” carrier fluid of Dawson et al (col. 3, lines 55-57).

10. Claims 6, 7, 47 and 48 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. Applicant’s amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

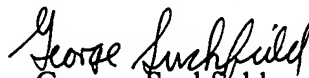
Art Unit: 3676

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Suchfield whose telephone number is 571-272-7036. The examiner can normally be reached on M-F (6:30 - 3:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Glessner can be reached on 571-272-6843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


George Suchfield
Primary Examiner
Art Unit 3676

Gs
February 17, 2006